

U.S. National Phase Patent Application Ser. No. 10/527,468

International Appl. No. PCT/EP02/03120

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AMENDMENTS TO THE DRAWINGS:

Attached hereto is new Fig. 3.

REMARKS

Initially, it is noted that the examiner has objected to the drawings because, in the examiner's opinion, the circular cross-section of the outlet and the outer cylindrical contour of the device of the present invention are not shown therein. In response, applicant provides herewith new Figure 3 depicting the circular cross-section of the outlet and the outer cylindrical contour of the device. Such elements are fully described in the specification (See e.g., Specification, page 4, lines 19-22) and no new matter has been entered. As such, entry of Fig. 3 and withdrawal of the examiner's objection to the drawings is respectfully requested.

The examiner has also rejected claims 21-22 and 30-31 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claiming the subject matter which applicant regards as the invention. More specifically, the examiner has objected to the phrase "order of magnitude" since such phrase defines no specific length or structure. Applicant has amended the claims to more clearly define the invention for which protection is sought. It is now believed that claims 21-22 and 30-31 is in proper form for allowance and withdrawal of the examiner's rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

The examiner has rejected claims 15, 19-22, 24, 28-31 and 33 under 35 U.S.C. § 102(b) as being anticipated by Fong, United States Patent No. 4,038,786. In addition, claims 16-17 and 25-26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Fong '786 patent in view of Hashish et. al., United States Patent No. 5,700,181. Claims 18 and 27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Fong '786 patent in view of Mitsuhashi et. al., United States Patent No. 6,093,088. Finally, claims 23 and 32 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Fong '786 patent in view of Zeng, United States Patent No. 6,244,927. As hereinafter described, applicant has amended the claims to more

particularly define the invention for which protection is sought. Reconsideration of the examiner's rejections is respectfully requested in view of the following comments.

Claim 15 defines a device for abrasive machining of surfaces of components. The device includes a tool having an inlet and an outlet. A supply unit conveys to the inlet a liquid in which abrasive agents are dissolved and which emerges from the outlet. A positioning means as part of the device guides the tool across a surface to be machined, and simultaneously positions the tool in such manner that the outlet faces the surface to be machined and such that an area of an annular gap defined by boundary walls of the outlet and the surface to be machined is smaller than a cross-sectional area of the inlet.

Initially, it must be noted that the Fong '786 patent pertains to non-analogous art. More specifically, the '786 patent discloses a device and a method for sandblasting with pellets of material or materials capable of sublimation. Referring to column 1, lines 11-29 of the '786 patent, sandblasting is described as being a process wherein pellets are propelled by a pressurized gas. This process is completely different from abrasive machining of surfaces to which the device of the present invention pertains. Gases and liquids are different with respect to production and effects of similar pressure values. Gases used in the sandblasting process are only transport media for abrasive pellets whereas liquids in which abrasive agents are dissolved (as claimed) and are abrasive media themselves. Thus, a device with a supply unit for conveying a liquid (as in the present invention) is not of the same category as a device with a supply unit for conveying a pressurized gas. Further, an important point of the sandblasting process is that pellets have a maximized momentum directed toward the surface being treated. See e.g., Fong, United States Patent No. 4,038,786. Thus, there is no intent or teaching in the cited reference to make the area of an annular gap smaller than a cross-sectional area of the inlet as required by independent claim 15.

The examiner further suggests that the Fong '786 patent discloses the positioning means defined in independent claim 15 since a user of sandblasting device may use their hand to manipulate the tool with respect to a workpiece. As such, in the examiner's opinion, it is possible to obtain any distance between the tool and the surface. However, the user's hand is not part of the device, as required by claim 15. In addition, an adjustment by hand of a distance between a tool with an inlet opening of a dimension appropriate for a hand held sandblasting tool and the workpiece is not feasible, especially when the tool is guided across the workpiece.

In view of the foregoing, applicant believes that independent claim 15 defines over the cited reference and is in proper form for allowance. Claims 16-19 and 21-23 depend either directly or indirectly from independent claim 15 and further define a device not shown or suggested in the art. It is believed that claims 16-19 and 21-23 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Referring to claim 24, a device is provided for abrasive machining of surfaces. The device includes a tool having an inlet and an outlet. A supply unit conveys to the inlet a liquid in which abrasive agent are dissolved and which emerges from the outlet. A positioning means, as part of the device, guides the tool across a surface to be machined and simultaneously positions the tool in such manner that the outlet faces the surface to be machined such that an area of an annular gap defined by boundary walls of the outlet and the surface to be machined is smaller than a cross-sectional area of the inlet. The supply unit conveys the liquid under a pressure smaller than 20 bar.

As heretofore described with respect to claim 15, the cited Fong '786 patent pertains to non-analogous art. Unlike the device of claim 24 which incorporates a supply unit for conveying a liquid, the device disclosed in the '786 patent incorporates a supply unit for conveying a pressurized gas. Two completely different processes. In addition,

since the sandblasting process disclosed in the '786 patent utilizes pellets have a maximized momentum directed toward the surface being treated, there is no teaching or incentive in the '786 patent to make the area of an annular gap smaller than a cross-sectional area of the inlet as required by independent claim 24. Finally, unlike the examiner's suggestion that the position of the tool with respect to the workpiece may varied by a user's hand, the device of claim 24 requires the positioning means to be part of the device. A limitation not shown or suggested in the cited reference. As a result, applicant believes that claim 24 defines over the cited reference and is in proper form for allowance.

Claims 25-33 depend either directly or indirectly from independent claim 24 and further define a device not shown or suggested in the art. It is believed that claims 25-33 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

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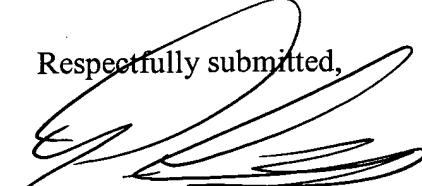
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Applicant believes the present application with claims 15-19 and 21-33 is proper form for allowance and such action is earnestly solicited. No fees are believed to be payable with the submission of this amendment. However, the Director is authorized to charge any fees associated with this or any other communication, or credit any overpayment, to Deposit Account No. 50-1170.

Respectfully submitted,



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